3749 Relative Expression of IL-1beta/IL-10 mRNA in Periodontal Health and Disease

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Cytokines play key roles in periodontal homeostasis and altered pro- and anti-inflammatory cytokine profiles may be related to periodontal destruction. Objectives: This study aimed to assess whether different patterns of mRNA expression for IL-1beta and IL-10 exist in gingival tissues with various periodontal conditions and to evaluate their potential relationship with periodontal conditions. Methods: 141 gingival biopsies were collected from 22 subjects with chronic periodontitis (CP) and 13 with aggressive periodontitis (AgP) during periodontal surgery, including periodontal pockets tissues (PoT), gingivitis tissues (GiT) and clinically healthy tissues (HT-P). 14 healthy control tissues (HT-C) were collected from 8 periodontally healthy subjects. The samples were evaluated for mRNA expression of IL-1beta, IL-10 and beta-actin by RT-PCR. Results: mRNAs for both cytokines (IL-1beta/IL-10) was frequently detected in controls (92.9%/100%) and in both CP (96.3%/86.4%) and AgP patients (89.6%/83.3%). No significant difference was found in detection frequency either between the sub-categories of samples in CP and AgP patients, or between the same categories of samples from CP and AgP patients. Inter-related mRNA expression of IL-1beta and IL-10 existed in HT-C ($r=0.562$, $p<0.05$) as well as in HT-P ($r=0.315$, $p<0.05$) and PoT ($r=0.322$, $p<0.05$). In HT-C, the detection frequency of samples with relatively stronger or weaker expression of IL-1beta mRNA was 28.5% (IL-1beta > IL-10) and 28.6% (IL-1beta < IL-10), respectively. The corresponding figures in various patient samples were as follows - PoT/GiT/HT-P: 51.3%/61.6%/41.4% in CP and 68.4%/69.3%/43.8% in AgP patients; and 15.4%/15.4%/24.1% in CP and 15.8%/15.4%/25.0% in AgP patients. Conclusions: IL-1beta and IL-10 mRNAs were frequently expressed in periodontal health and disease, while their relative expression levels varied under different periodontal conditions. Relatively stronger mRNA expression of IL-1beta over IL-10 seems to show a trend toward involving in periodontal inflammation and destruction. Supported by the Hong Kong Research Grants Council (RGC, HKU 7310/00M). ljjin@hkusua.hku.hk

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